



SPEC® CINT2006 Result

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Tyan

(Test Sponsor: Advanced Micro Devices)

SPECint®_rate2006 = 51.7

Thunder n4250QE (S4985) Opteron 2220 SE

SPECint_rate_base2006 = 46.1

CPU2006 license: 49

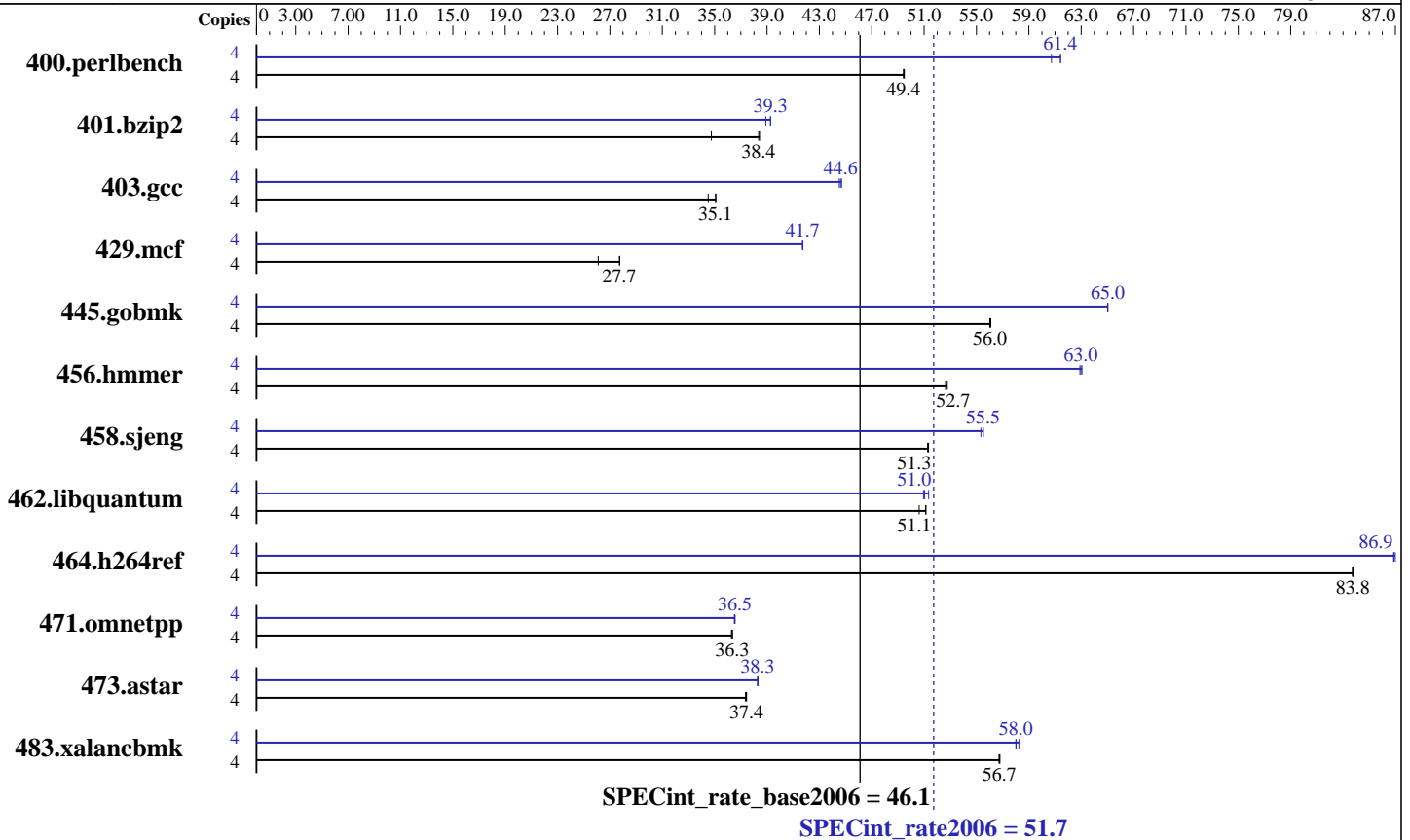
Test sponsor: Advanced Micro Devices

Tested by: AMD

Test date: Jul-2006

Hardware Availability: Oct-2006

Software Availability: Aug-2006



Hardware

CPU Name: AMD Opteron 2220 SE
 CPU Characteristics:
 CPU MHz: 2800
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per core
 L3 Cache: None
 Other Cache: None
 Memory: 8 GB (8x1GB, DDR2-667 CL4 ECC Reg Dual Rank)
 Disk Subsystem: SATA, 74 GB
 Other Hardware: None

Software

Operating System: Suse Linux Enterprise Server 9 SP3 64-bit kernel
 Compiler: QLogic PathScale
 Compiler Suite, Release 2.5
 SmartHeap 8.0 32 bit Library for Linux
 Auto Parallel: No
 File System: ext3
 System State: Multi-user, run level 3
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: None



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Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	790	49.5	<u>791</u>	<u>49.4</u>	791	49.4	4	644	60.7	<u>636</u>	<u>61.4</u>	636	61.4
401.bzip2	4	1111	34.7	1005	38.4	<u>1006</u>	<u>38.4</u>	4	992	38.9	<u>983</u>	<u>39.3</u>	983	39.3
403.gcc	4	918	35.1	933	34.5	<u>918</u>	<u>35.1</u>	4	723	44.5	720	44.7	<u>722</u>	<u>44.6</u>
429.mcf	4	1397	26.1	<u>1316</u>	<u>27.7</u>	1314	27.8	4	<u>874</u>	<u>41.7</u>	874	41.7	874	41.7
445.gobmk	4	749	56.0	748	56.1	<u>749</u>	<u>56.0</u>	4	<u>645</u>	<u>65.0</u>	645	65.0	645	65.0
456.hmmer	4	<u>708</u>	<u>52.7</u>	709	52.6	707	52.8	4	593	62.9	592	63.1	<u>593</u>	<u>63.0</u>
458.sjeng	4	<u>944</u>	<u>51.3</u>	943	51.3	944	51.3	4	875	55.3	<u>872</u>	<u>55.5</u>	872	55.5
462.libquantum	4	1637	50.6	<u>1621</u>	<u>51.1</u>	1621	51.1	4	1627	51.0	1614	51.3	<u>1624</u>	<u>51.0</u>
464.h264ref	4	1057	83.7	<u>1057</u>	<u>83.8</u>	1057	83.8	4	1019	86.9	<u>1019</u>	<u>86.9</u>	1018	87.0
471.omnetpp	4	688	36.4	689	36.3	<u>688</u>	<u>36.3</u>	4	<u>684</u>	<u>36.5</u>	684	36.6	685	36.5
473.astar	4	750	37.4	752	37.4	<u>750</u>	<u>37.4</u>	4	733	38.3	733	38.3	<u>733</u>	<u>38.3</u>
483.xalancbmk	4	486	56.8	486	56.7	<u>486</u>	<u>56.7</u>	4	474	58.2	476	58.0	<u>476</u>	<u>58.0</u>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

General Notes

taskset utility used to bind CPU(s) to processes
All memory slots filled on all chips

The tested system can be assembled using any SSI-MEB case and a Silverstone Zeus 650 watt ST65ZF ATX 12V Power Supply.

Base Compiler Invocation

C benchmarks:
pathcc

C++ benchmarks:
pathCC

Base Portability Flags

```

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64

```

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Base Portability Flags (Continued)

462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:

-Ofast

C++ benchmarks:

-Ofast -m32

-L/spec/mpaton/6v1.0/amd512K8.lib/microquill/lib -lsmartheap

Base Other Flags

C benchmarks:

-IPA:max_jobs=2

C++ benchmarks:

-IPA:max_jobs=2

Peak Compiler Invocation

C benchmarks:

pathcc

C++ benchmarks:

pathCC

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LINUX



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Peak Optimization Flags

C benchmarks:

```

400.perlbench: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
401.bzip2: -O3 -LNO:ou_prod_max=10 -OPT:Ofast -OPT:alias=disjoint
403.gcc: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -m32 -O3
        -OPT:Ofast
429.mcf: -m32 -O2 -ipa
        -L/spec/mpaton/6v1.0/amd512K8.lib/microquill/lib -lsmartheap
445.gobmk: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
        -OPT:alias=disjoint -LNO:simd=0 -LNO:minvariant=off
        -WOPT:retype_expr=on
456.hmmmer: -O2 -OPT:alias=disjoint -WOPT:aggstr=0 -CG:cflow=0
458.sjeng: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
        -IPA:plimit=50000 -IPA:pu_reorder=2
462.libquantum: -O3 -ipa -CG:local_fwd_sched=on -IPA:space=1000
464.h264ref: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
        -IPA:plimit=20000 -OPT:alias=disjoint -LNO:prefetch=0

```

C++ benchmarks:

```

471.omnetpp: -Ofast -IPA:pu_reorder=2 -CG:gcm=off -m32
        -L/spec/mpaton/6v1.0/amd512K8.lib/microquill/lib -lsmartheap
473.astar: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
        -m32
        -L/spec/mpaton/6v1.0/amd512K8.lib/microquill/lib -lsmartheap
483.xalancbmk: -Ofast -m32 -OPT:unroll_times_max=8
        -L/spec/mpaton/6v1.0/amd512K8.lib/microquill/lib -lsmartheap

```

Peak Other Flags

C benchmarks:

-IPA:max_jobs=2

C++ benchmarks:

-IPA:max_jobs=2



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The flags file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.25.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.25.xml

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